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## Book Review.

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BY J. LUNELL.

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*The Sixth Biennial Report of the Director of the Agricultural College Soil and Geological Survey of North Dakota to the Governor of North Dakota (1911-1912) by Herbert A. Hard. Chapter XI: Plant Survey of Barnes County by H. F. Bergman. Chapter XII: Flora of North Dakota by H. F. Bergman.*

In briefly reporting these publications written by an author who professes views often diametrically opposed to my own I would feel sorry if some reader considered this paper a missile from enemy trenches intending to hurt. Nor is it a peace message. By all means I wish it to be permeated by a spirit of fairness.

I shall not repeat what I have said once before about the vital defects of plant surveys. I am glad that they are abolished within our state. There are more sensible, quicker and less expensive methods for exploring the flora of a land area. The catalogue of Barnes County plants in chapter XI. is as complete as can be expected from the few seconds or minutes spent on each different square yard of its surface, perhaps never to be visited again, and no fault can be found with the collector.

I can not refrain here from calling attention to many inconsistencies or discrepancies, not to say contradictions, to be found in the nomenclature adopted in chapters XI and XII. As the report evidently is written not only for a few botanists of the state, but for any and all of our interested citizens, no matter what standing they occupy, one name for the same plant ought to have been preferred, and if this were thought insufficient, synonyms ought to have been added parenthetically. Such uniformity ought to have been welcome to the readers and facilitate their efforts to master the contents of the book. The more liberal views in chapter XI have a tendency of becoming narrowed down "to the first principles" in chapter XII as f. i. *Potamogeton richardsonii* to *P. perfoliatus*, *Alisma subcordatum* to *A. plantago-aquatica*, *Salicornia herbacea* to *S. europaea*, *Atriplex ovata* to *A. suckleyana*, *Salsola tragus* to *S. kali*, *Delphinium albescens* to *D. penardi*, *Prunus melanocarpa* to *P. virginiana*, *Viola scabriuscula* to *V. pubescens*, and *Viola subvestita* to *V. adunca*. Here we find that the preferred name in chapter XI is the synonym in chapter XII, while only one name is

given in chapter XI. Two species in Chapter XI have often been reduced to one in chapter XII: *Dondia depressa* and *erecta* to *D. depressa*, *Actaea rubra* and *eburnea* to *A. rubra*, *Crataegus chrysocarpa* and *rotundifolia* to *C. chrysocarpa*, *Kuhnistera candida* and *oligophyllato* *Petalostemon candidus*. A floral "melting pot" established merely in part is undesirable. Contradictions are by no means rare: *Onosmodium molle* Michx. of chapter XI has (correctly) been called *O. occidentale* in chapter XII, where it is told also that this is *not O. molle* Michx: still the Barnes County plant belongs here, as the genus has only one species within the state. Other species regarding which "to be or not to be is the question," are: *Lepidium apetalum* Willd. (Chapter XI) and *L. apetalum* authors, not Willd. (Chapter XII): *Atriplex hastata* L. (chapter XII) and *A. carnosa* Nels. (*A. hastata* Am. authors not L. (chapter XII)); *Smilax herbacea* L. (chapter XII) and *Nemexia pulverulenta* (*S. herbacea* Am. authors) in chapter XI; *Viola canadensis* L. (chapter XI) and *V. rugulosa* Greene (*V. canadensis* auth. not L.) in chapter XII. Another group of plants is not mentioned in chapter XII, i. e. they are not supposed to grow in North Dakota while they are enumerated in chapter XI as Barnes County plants: *Equisetum variegatum*, *Thalictrum dioicum*, *Xanthium speciosum*, *Antennaria campestris* (though perhaps this species has been dumped in the melting pot and was meant as a part of *A. neglecta* in chapter XII) and *Helianthus strumosus*. We do not attempt to solve this mystery.

The following remarks are to be applied exclusively to chapter XII (the flora). A lamentable defect with the work is that it does not report the total number of plants known within the state up to the date of publication (1917). A check list (of 1912?) containing 962 numbers can be considered its precursor. Based on this list, though with many additions and exclusions, the revised flora was emitted, but the original number of 962 was retained (if my count is correct). A conservative estimate would add at least 25 per cent to this number, even if all proposed new species and varieties were to suffer an indiscriminate universal slaughter, as the retained old species mainly would fill the vacancies.

Such author names as Greene, Rydberg, Aven Nelson, Fernald, representing as brilliant stars on the botanical firmament as the Polar Star in the space, (*Stella Polaris nescit occasum*) are conspicuous by their scarcity or absence or misapplication (analogy *lucus a non lucendo*.)

In recording localities the short method applied for *Ranunculus Cymbalaria* and *Brassica juncea* is commendable. The term "Throughout the state" ought to have been used for all those common plants found everywhere by everyone.

Giving in most cases a large number of localities and crediting the collectors is just as much waste, the more culpable during times when the federal administration instructs its employees to save paper. The records for most other plants not belonging to this class are numerous and the more valuable as so many of them have their place in history. When the war came, what little of the virgin prairie was left had to be utilized for grain production and pasturing of beef cattle, and very little ground beside the section lines was left as a refuge for the wild flowers.

I shall not raise any quarrel by dropping adverse remarks that signify my individual views regarding the preferred species names. Nor shall I resent that among the plants collected by me and for which I have been credited in the flora, a not trifling number has been passed under names not at all attributable to me. I shall only mention critically a few particulars.

*Malva rotundifolia* L., as described in the key, is identical with the plant bearing that name in American manuals. *M. rotundifolia* L. in European floras comes very near to or is identical with the *M. borealis* of the key. It is an intricate proposition to decide which view is right or wrong.

*Steironema membranaceum* Greene is represented only by the type at the University of Notre Dame, Ind., and in my herbarium. The Pleasant Lake specimen of 1912 was erroneously distributed under this name.

*Dracocephalum Nuttallii* (*Physostegia parviflora*). If somebody wishes to reduce *P. formosior* to synonymy, he at least ought to connect it with *P. virginiana*, not with this species!

*Fragaria virginiana* Duch. Why not as well take the full step and call it *F. vesca* L. and avoid the anxiety and worry we other poor fellows have experienced in trying to master a delicate differentiation between proposed species?

*Oxytropis*. Almost all our species have been reduced to synonymy under *Aragallus Lamberti*, and there is poor reason then to exempt *A. monticola* from a similar fate. This would be accomplished by making the floral limit 12-25mm. (in place of 16-25mm.) and disregard the color difference which is not respected anyway, subse-

quently in the text allotted to the species. Our genus would be confined to two lilliputian species, *A. deflexus* and *A. splendens*, and one giant *A. Lamberti*, all with splendid differential limits, and it would be a more perfect system. A beautiful card-castle of proposed species torn down at the same time would add to the "victory," but this calamity ought not to disturb the sleep of the just.

*Xanthium*. "*Interdum dormitat bonus Brittonus*" most likely thought Dr. Bergman when he found that Dr. Britton, who had only one native species in his Ill. F., had allowed 7 additional native species to slip into his manual. This rate of admittance of species no doubt was too fast to win Dr. Bergman's approval, and he took a middle course in his flora, admitting just 2 species: 1) *X. canadense* (which assimilated *X. Pennsylvanicum*); and 2) *X. echinatum* which included *X. glanduliferum*, and at the same time he mustered into service under said name a specimen of *X. speciosum* collected by me at Minot Aug. 20, 1905. *X. commune* and *X. acerosum* have not even received an honorable mention but they would in all probability have been incorporated with *X. echinatum*.

*Arnica fulgens* Pursh. The name of the Dakota plant is correctly *A. pedunculato* Rydb. or *A. monocephala* Rydb.

*Alisma brevipes* Greene (*A. superbum* Lunell). The synonymy was proposed, if I am not mistaken, in the N. Am. Flora and adopted in Rydb. Rocky Mt. Flora and in this report. The outside world has not yet seen the real type of my *A. superbum*. It is in my herbarium and will be open to inspection under certain conditions.

*Potamogeton pectinatus*. The specimen cited from Lake Ibsen is *P. Friesii*, and I can not imagine how it was labeled otherwise.

*Avena Torreyi* Nash. Known since the beginning of this century also from the Devil's Lake Chataqua grounds, where it has been collected by me repeatedly.

If asked for my impression of the botanical part of this report I venture to say this: While teaming with an abundance of knowledge amassed from the year of 1753 until the first part of this century, it has either from waning interest in the subject or from difficulties in reaching the material to be studied, or on account of its author's removal from this botanical field—not paid sufficient attention to the notable advances of the latest years.

*Leeds, North Dakota.*